Hah. Pampa Aullaga. Alt. 3700 m .
Type. Female. B.M. no. 2. 2. 2. S1. Original number 1642. Killed 21st October, 1901.

The specimen from Sevaruya, a place I fail to identifv, but not on the Pampa Aullaga, is rather darker than the Pampa ones, representing an intermediate colour between these and the typical Sahama series.

## 17. Marmosa elegans, Waterh.

$2 \delta, \pm q$. Challapata, 3700 m . ठ $\ddagger$. Suere, 3000 m .
XXXIX.-Contributions from the New Mexico Biological Station.-XII. On some Genera of Bees. By 'I'. D. A. Cockerell and Emerson Atkins.

The family Stelidæ of Ashmead consists of a series of parasitic bees which can hardly be grouped together in a classification based on actual blood-relationship. The subfamily Stelidinæ appears to be an offshoot from the Anthidiinæ; while it has been suggested that the other subfamily, Coelioxinæ, is similarly related to the Megachilinæ. The Colioxine, however, appear to be a composite group, Ccelioxys and its allies being close to Megachile, while the genera with 4- to 6 -jointed maxillary palpi must be referred to quite another series.

Dioxys (IIoplopasites) producta, var. subrubra (CkII.).
Labial palpi.-1 * longer than $2 ; 3+4$ less than half length of 2 .

Daxillary palpi.-Apparently 2-jointed; 1 oval, much longer than broad, 2 minute. There is presumably a basal tubercle, representing the true first joint, so that the palpi are properly 3 -jointed.

Galea.-Slender, falciform, with transverse striæ; inner margin ciliate.

Mr. Ashmead states that Hoplopasites is distinct from Dioxys, but no distinctive characters have been pointed out, nor have we found them.
'I'he transverse strix on the galea are noteworthy, as they do not occur in the supposedly allied genera Culioxys \&c., but do occur in Meriades and Chelostoma.

[^0]
## Heriades truncorum (L.).

Labial palpi.-1 much shorter than 2. Maxillary palpi 3-jointed.

## Chelostoma campanularum (Kirby).

Labial palpi.-1 extremely short, 2 very long; last joint only diverging from the straight line.

Maxillary palpi 3-jointed.

## Phileremus mesille, Ckll.

Labial palpi.-1 longer than 2 ; palpi shorter than in Dioxys productus; $3+4$ more than half length of 2 .

Tongue very broadly fimbriate, the lateral fimbrice towards the tip longer than breadth of tongue at that point.

Maxillary palpi 2 -jointed; 1 a low broad tubercle, 2 longoval, rather large. 'The palpi look as if 1 -jointed.

Gulea.-Comparatively short and broad, broadly rounded at end, inner margin not ciliate ; stria longitudinal.

The galea is wholly unlike that of Coelioxys, Megachile, Dioxys, dec., and resembles that of Epeolus. It seems likely that this and the Epeolus-like outward appearance of the bees are indications of real relationship.

This appears to fall in Phileremus as defined by Taschenberg, but it is by $n o$ means an Ammobutes, of which Phileremus has been lately regarded a synonym. It accordingly finds no place in Ashmead's tables.

## Coclioxys gilensis, Ckll.

Labial palpi. -1 shorter than $2 ; 3+4$ not half length of 2 .
Maxillary palpi 3 -jointed; 1 a rounded tubercle; 2 broad, subquadrate viewed laterally; 3 rather small but stout.

Gialea.-Long-falciform ; striæ oblique, decussating ; inner margin ciliate. The mouth-parts contirm the view that this genus is closely related to Megachile.

Megachile apicalis, Spinola.
Labial palpi. -1 and 2 about equal, very much broadened, cach with a row of strong bristles.

Maxillary palpi 3 -jointed; 3 much longer than in Colioxys.
Gulea.-Broad and tapering, with a margin on each side of the double rib. 'The inner area is rather narrow, decussated, and strongly ciliated on the edge; the outer area is broad, plain (not striated), and its edge is not ciliated. The rib bears a row of long bristles and shows some hyaline dots.

This differs from Colioxys in the greatly developed outer area of the galea; but this is only a specifie character, as the following cases show:-
M. fortis.-Decussated area much the broadest, plain area very small.
11. ficlelis.-Plain area even more reduced.
M. pugnata.-Plain area on apical half a little larger than the decussated, but it is narrow below.
Mr. manifesta.-Plain area larger than the decussated.
M. exilis.-Plain area very narrow. (This species is peculiar for the maxillary palpi, which are covered with long bristles, and the third joint is remarkably long.)
M. cleomis.-Plain area almost as large as the decussated.

## Phileremulus nanus, Ckll.

Labial palpi.-1 long, a little longer than $2+3+4 ; 2$ short, not very much longer than 3 ; 3 and 4 similar in character to 2 . (Compare with nomada.)

Tongue.-Very long and slender, about twice as long as labial palpi. The tongue resembles that of Allodupe.

Maxillary palpi 5 -jointed; 1 broad and flattened; 2 long, cylindrical; 3 broader than 2 or 4 ; 5 somewhat constricted at middle. Deasurements of joints in $\mu:-(1) 15$, (2) 66, (3) $27,(4) 24,(5) 66$.

Gialea.-Slender, falciform, sepia-colonr, with the inner margin of apical half colouless; the sepia portion with minute hyaline dots; inner margin with few minute hairs.

## Neolarra pruinosa, Ashm.

Description from material taken at Mesilla Park, N. M., May 7, on flowers of Dithyrea IV islizemii.

Labial palpi.-2 longer than in Phileremulus and nearly twice as long as 3 .

Maxillary palpi 6 -jointed; 4 broad at end ; 6 very slender, only half as broad as 5 . Mcasurements in $\mu:-(1) 24$, (2) 69 , (3) 36 , (4) 45 , (5) 57 , (6) 69.

Neolarra and Phileremulus agree nearly with Allodupe in the mouth-parts. Simith firures, but does not count, a first joint in the maxillary palpus of Allodape similar to that of Phileremulus; on the other hand, he appears to comit the long teminal juint as two. 'The habits of Allodape seem to resemble those of Phileremulus.

## Ashmeadiella.

A. bucconis, A. cactorum, and A. bigelovice examined. Maxillary palpi 4 -jointed. Galea very slender, decuszatel. In bucconis and cactoram the first two joints of the labial palpi are very long and about equal; in cactorum the third joint is narrowly heart-shaped. In $A$. bigelovice the first two joints of labial palpi are broadened and the first joint is noticeably longer than the second.

Ashmeadiella appears to be related to Osmia, but not to be much allied to Meriades or Chelostoma.

All the slides which form the basis of this paper were prepared by Mrs. W. P. Cockerell.

## Appendix. By T. D. A. Cockerell.

I would propose, in view of the above facts, to split up the C'olioxine* of Ashmead (Tr. Am. Ent. Soc. xxvi. p. 80) into several subfamilies:-
(1) Coclioxinæ proper, including Colioxys, to follow Megachiline in the series.
(2) Dioxine, including Dioxys (with Hoploprsites), position somewhat uncertain. The separation of this from Colioxinæ may perhaps be erroneous.
(3) Philereminæ, including Phileremus (sens. Taschenberg), to follow the series of Epeolus \&c. $\dagger$
(4) Allodapinæ, apparently including Allodupe, Phileremulus, and Nenlarra; but I know the tirst genus only from description.
This leaves numerous genera not accounted for; I do not place them, because I have no specimens, though their position can usually be guessed at.

## Dioxys Martii, Ckll., sp. n.

ㅇ.-Length about 7 millim. Black (without any red) ; pubescence about as in $D$. producta subrulura, the five hairbands on abdomen very dense and white; leys black; tibial

[^1]spurs orange; antema formed and coloured as in subrubra, the flagellum ferruginous beneath: tegula piceons, with a dark ferruginous pateh; first recurent nervare joining first submarginal cell a little before its end; thoracic spine \&ec. as in subrubra; abdomen oval, not tapering apically, apical segment not produced. Otherwise abont as in subrubra.

Hah. Picacho Mountain, Mesilla Valley, New Mexico, March 25, 1900, at flowers of Spleeralcea Martii. The plant was also new and was described in 'Botanical Gazette,' July 1901, p. 60.

East Las Vegas, New Mexico, U.S.i., Feb. 4, 100?

## bibliographical motices.

A Treatise on Zoolog!. Edited hy E. Ray Lankestre, M.A., LL D., F.R.S.-PartIV."The Platykeimia, Mesnzoa, unl Nemertini. By W. Blaxlayd Bexitas, D.Sc. (Lond.), M.A. (Oxon.). London: Adam \& Charles Black, 1901.
Tire present volume - the fourth in order of the complete series-is by Prof. Ienham, who is to be congratulated on having fulfilled a very arduous task in a most successful manner. Singularly unattractive animals, and mostly parasitie in habit, it is not surprising that their study is attempted only by those keenly interested in the adrancement of zoological seience or in the investigation of the many and often very painful devastating diseases whieh are inflicted on mankind and the lower animals as a result of this parasitism.

Condensed into a surprisingly small compass, the author has contrived to embody practically everything that is known of these animals; so that this volume will form a source of reference of the highest value alike to the systematist, the morphologist, and the physician.

The historical sections of the various ehapters are extremely interesting reading, and bear eloquent testimony to the extreme difficultr which besets the errrect interpretation of the structure of these animals and the many pitfalls in the path of the investigator.

The Mesozoa of Yian Beneden are very fully dealt with in an appendix to the Ilatyhelminths, being regarded by the author as degencrate forms of this phylum-a riew shared by Whitman and others-and therefore not needing the formation of a special grade to contain them. To this appendix the editor adds a rery interesting paragraph on four new species of Orthonectids paraitic in Cheetoprods and Nemertines.

The work haring heen somewhat ilelayed in the press, a few notes have been added to the ehapter on the Nemertines by Mr. R. © I'unnett, of St. Andrews, in order to bring the work eompletely up


[^0]:    * In this paper the figures in the descriptions of the palpi are to bo understuod to refer to the joints: thus, $1=$ first joint.

[^1]:    - The Colioxyne of Dalla-Torre and Friese is even more composite, including all the European parasitic bees except IPsithyrus and stelis! Ashmead ('Tr. Am. Ent. Soc. xxri. p. 53) has given an excellent criticism of this arrangement, and my onlr objection to his reforms is that they do not go nearly far enourh along the lines he has indicaterl.
    $\dagger$ Phiteremus and Lipolus wonld form a more natural group than Epeotus and Nomada.

